

CLAIMS

1. An applicator assembly for use in applying a sheet of surgical material through an opening to bridge the remote internal termination of the opening, the assembly comprising;
  - 5 a) a deployment sleeve;
  - b) a plunger for location within the sleeve, to extend from the proximal to the distal end thereof;
  - c) a sheet of surgical material which can be folded, or collapsed, for location at and within the distal end of the deployment sleeve;
  - 10 d) an actuating means operative to unfold or erect the sheet following expulsion from the distal end of the deployment sleeve through longitudinal movement of the plunger.
2. An applicator assembly in accordance with claim 1, including a pulling means operative to apply a pull force to the sheet following deployment.
- 15 3. An applicator assembly in accordance with claim 2, wherein the pulling means is a suture.
4. An applicator assembly in accordance with any preceding claim, wherein the sheet material, in use, is encased and protected within the deployment sleeve during the manipulation procedure to position the sleeve at the termination of the opening after which the sheet is expelled by the plunger  
20 to be erected to close behind and over the internal area of the opening.
5. An applicator assembly in accordance with any preceding claim, wherein the sheet of surgical material comprises a known surgically compatible

mesh such as polypropylene, preferably including a PTFE or similar non-stick material on one surface, being the innermost facing surface adjacent the applicator.

6. An applicator assembly in accordance with claim 5, wherein the entire  
5 sheet is wholly of PTFE.
7. An applicator assembly in accordance with any preceding claim, wherein the sheet material is normally a flat flexible sheet, preferably circular, and includes radial ribs forming more rigid but resilient arms through which, when the sheet is forced to a collapsed or folded configuration, the sheet  
10 is caused to open out to restore the flat form.
8. An applicator assembly in accordance with claim 7, wherein the opening is effected through the properties of the sheet material itself.
9. An applicator assembly in accordance with any preceding claim, wherein opening is effected or assisted through a suture which pulls the sheet  
15 upward towards the applicator.
10. An applicator assembly in accordance with any preceding claim, wherein the sheet includes ribs which have preformed fold creases to facilitate collapse to a predetermined configuration.
11. An applicator assembly in accordance with any preceding claim, wherein  
20 the sheet includes ribs which have a "memory" acting to restore the sheet to a flat form.
12. An applicator assembly in accordance with any preceding claim, wherein, in use, after deployment of the sheet the opening thereof is effected or assisted by a separate actuating means which may comprise a suture

needle, with or without an attached suture, extending through the plunger from the proximal to the distal end of the sleeve and connecting with the sheet, the suture being arranged so that a pulling force applied thereto opens the sheet.

- 5 13. A sheet of surgical material including ribs or radially extending formations which may be resiliently flexed and which, on restoration, extend the sheet from a folded, pleated or crumpled form to a flat and self-supporting form.
- 10 14. A sheet of surgical material including radial ribs each rib being hinged to allow outer parts of the sheet to be folded inwards into a conical shape, the sheet being extended to a flat form by an actuating means.
15. A sheet of surgical material in accordance with claim 13 or 14, wherein the ribs are of a biodegradable material.
- 15 16. An applicator assembly for use in applying a sheet of surgical material through an opening to bridge the remote internal termination of the opening substantially as described herein and exemplified with reference to the drawings.
- 20 17. A sheet of surgical material including radial ribs each rib being hinged to allow outer parts of the sheet to be folded inwards into a conical shape, the sheet being extended to a flat form by an actuating means as described herein and exemplified with reference to the drawings.